



Rev 01/04

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application : M. Selim Unlu et al.
Application No. : 10/790,403
Filed : March 1, 2004
For : REFLECTIVE LAYER BURIED IN SILICON
AND METHOD OF FABRICATION
Attorney's Docket : BU-021AX

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 27, 2004.

By:

James F. Thompson
Registration No. 36,699
Attorney for Applicant(s)

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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It is desired to cite for the record in this application the enclosed references listed on the attached copy of PTO Form #1449. The paragraph(s) marked below are applicable to this Information Disclosure Statement.

- [X] (1) Pursuant to 37 C.F.R. § 1.97(b)(1) and (2), the attached Information Disclosure Statement is being filed within three months of the filing date of the above identified national application or within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 of the above identified application. Accordingly, applicant(s) believes that no fee or statement under 37 C.F.R. § 1.97(e) is required.

- [X] (2) Pursuant to 37 C.F.R. § 1.97(b)(3), applicant(s) believes the attached Information Disclosure Statement is being filed before the mailing date of a first Office action on the merits. Accordingly, applicant(s) believes that no fee or statement under 37 C.F.R. § 1.97(e) is required.
- [] (3) Pursuant to 37 C.F.R. § 1.97(b)(4), applicant(s) believes the attached Information Disclosure Statement is being filed before the mailing date of a first Office action after the filing of a request for continued examination under § 1.114. Accordingly, applicant(s) believes that no fee or statement under 37 C.F.R. § 1.97(e) is required.
- [] (4) Pursuant to 37 C.F.R. § 1.97(c), the attached Information Disclosure Statement is being filed before the mailing date of a final action or a notice of allowance and is accompanied by:
- [] a statement under 37 CFR § 1.97(e); or
- [] the fee set forth in § 1.17(p).

PETITION UNDER 37 CFR § 1.97(d)

- [] (5) Pursuant to 37 CFR § 1.97(d), applicant(s) hereby petitions the Commissioner to consider the attached Information Disclosure Statement which is being filed on or before payment of the issue fee. This petition is accompanied by a statement under 37 C.F.R. § 1.97(e) and the petition fee set forth in 37 C.F.R. § 1.17(p).

STATEMENT UNDER 37 C.F.R. § 1.97(e) (1)

- [] (6) The undersigned hereby states that each item of information contained in the attached Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.

STATEMENT UNDER 37 C.F.R. § 1.97(e) (2)

- [] (7) The undersigned hereby states that no item of information contained in the attached Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the attached Information Disclosure Statement was known to any individual designated in 37 C.F.R. §

1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Where the status of the application has changed, unknown to the applicant, such that the boxes checked are no longer applicable, the Commissioner is authorized to accept this submission with any additional fees required by that change charged to Deposit Account No. 23-0804.

The filing of this Information Disclosure Statement is not a representation by the undersigned as to personal knowledge of the contents of every word or phrase of the material enclosed or that reliance on other suitably trained professionals has not been made.

If a search report of a searching agency is enclosed identifying the nature of the relevance of each document, such a designation is deemed to satisfy 37 C.F.R. § 1.98(a)(3) even if in a foreign language because the codes are the same in all languages. However, applicant(s) does not necessarily adopt the position reflected by that report.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 23-0804. Triplicate copies of this letter are enclosed.

Respectfully submitted,

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Date: April 27, 2004
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(REV. 05/03)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. BU-021AX	APPLICATION NO. 10/790,403
 OPI INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>			
		APPLICANT: M. Selim Unlu et al.	
		FILING DATE March 1, 2004	TC ART UNIT

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	PUBLICATION/ ISSUE DATE	NAME	CLASS	SUBCLASS	FILING DATE
	US 5,770,511	06/23/1998	Matsumoto et al	438	406	
	US 5,376,215	12/27/1994	Ohta et al	156	345	
	US 4,670,765	06/02/1987	Nakamura et al	357	30	
	US 5,757,986	05/26/1998	Crampton et al	385	2	
	US 5,767,507	06/16/1998	Unlu et al	250	225	
	US 5,710,057	01/20/1998	Kenney	437	62	
	US 5,671,914	09/30/1997	Kalkhoran et al	257	77	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

	Ishikawa et al., "Epitaxy-ready Si/SiO ₂ Bragg Reflectors by Multiple Separation-by-Implanted Oxygen", Appl. Phys. Letters, Vol 69, No. 25 16 December 1996.
	Sinnis et al. "Silicon-based Resonant-cavity-enhanced Photodiode with a Buried SiO ₂ Reflector", Appl. Phys. Letters, Vol 74, No. 9, 1 March 1999.
	Schow et al., "Design and Implementation of High-speed Planar Si Photodiodes Fabricated on SOI Substrates", IEEE Journal of Quantum Electronics, Vol. 35, No. 10, October 1999.
	Schaub et al., "Resonant-cavity-enhanced High-speed Si Photodiode Grown by Epitaxial Lateral Overgrowth", IEEE Photonics Technology Letters, Vol. 11, No. 12, 12 December 1999.
	Jalali et al., "Advances in Silicon-on-Insulator Optoelectronics", IEEE Journal of Selected Topics in Quantum Electronics, Col. 4, No. 6, Nov/Dec 1998.
	Fukatsu et al., "Spectral Modulation of Luminescence of Strained Si _{1-x} Ge _x /Si Quantum Wells in a Vertical Cavity with air/Si and Si/SiO ₂ Interface Mirrors", Appl. Phys. Letters, Vol. 65, No. 24, 12 December 1994.

EXAMINER	DATE CONSIDERED
*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: April 27, 2004

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EXAMINER INITIAL	DOCUMENT NUMBER	PUBLICATION/ ISSUE DATE	NAME	CLASS	SUBCLASS	FILING DATE
	US 5,726,440	03/10/1998	Kalkhoran et al	250	214.1	
	US 5,498,863	03/12/1996	Miller	250	214.1	
	US 5,389,797	02/14/1995	Bryan et al	257	21	
	US 5,455,421	10/03/1995	Spears	250	338.4	
	US 5,020,066	05/28/1991	Iga et al	372	45	
	US 5,559,912	09/24/1996	Agahi et al	385	42	
	US 5,525,828	06/11/1996	Bassous et al	257	457	
	US 5,793,060	08/11/1998	Morikawa	257	85	
FOREIGN PATENT DOCUMENTS						
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)						
	Yonehara et al., "Epitaxial Layer Transfer by Bond and Etch Back of Porous Si", Appl Phys. Letters, Vol. 64, No. 16, 18 April 1994.					
	Tan et al., "Modeling and Performance of Wafer-Fused Resonant-Cavity Enhanced Photodetectors", IEEE Journal of Quantum Electronics, Vol. 31, No. 10, 10 October 1995.					
	Bean et al., "High-Speed Polysilicon Resonant-Cavity Photodiode with SiO ₂ -Si Bragg Reflectors", IEEE Photonics Technology Letters, Col. 9, No. 6, June 1997.					
	Diaz et al., "Si/SiO ₂ Resonant Cavity Photodetector", Appl. Phys. Letters, Vol. 69, No. 19, 4 November 1996.					
	Murtaza et al., "Short-Wavelength, High-Speed, Si-Based Resonant-Cavity Photodetector", IEEE Photonics Technology Letters, Vol. 8, No. 7, July 1996.					
	Sato et al., "High-Quality Epitaxial Layer Transfer (ELTRAN) by Bond And Etch-Back of Porous Si", Proceedings of 1995 IEEE International SOI Conference, October 1995.					
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EXAMINER INITIAL	DOCUMENT NUMBER	PUBLICATION/ ISSUE DATE	NAME	CLASS	SUBCLASS	FILING DATE
	US 5,837,561	11/17/98	Kish, Jr. et al.	438	47	
	US 5,374,564	12/20/94	Bruel	437	24	
	US 5,227,648	7/13/93	Woo	257	185	
	US					
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	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO
OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)						
	Alles et al., "Advanced Manufacturing of SIMOX for Low Power Electronics", Solid State Electronics, Vol. 39, No. 4, pp 499-504, 1996.					
	Wada et al., " A New Approach of Photonic Bandgap Formation-Wafer Bonding and Delamination Technique", Extended Abstracts of the 1998 International Conference on Solid State Devices and Materials, pp 382-383 1998.					
	Unlu et al., "Resonant Cavity Enhanced Photonic Devices", Journal Appl. Phys. Vol. 78, No. 2, 15 July 1995.					
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